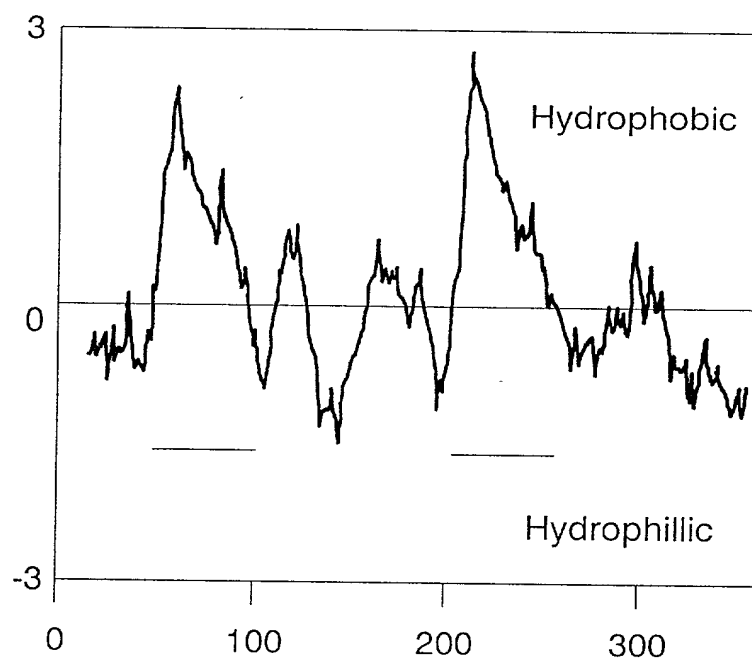
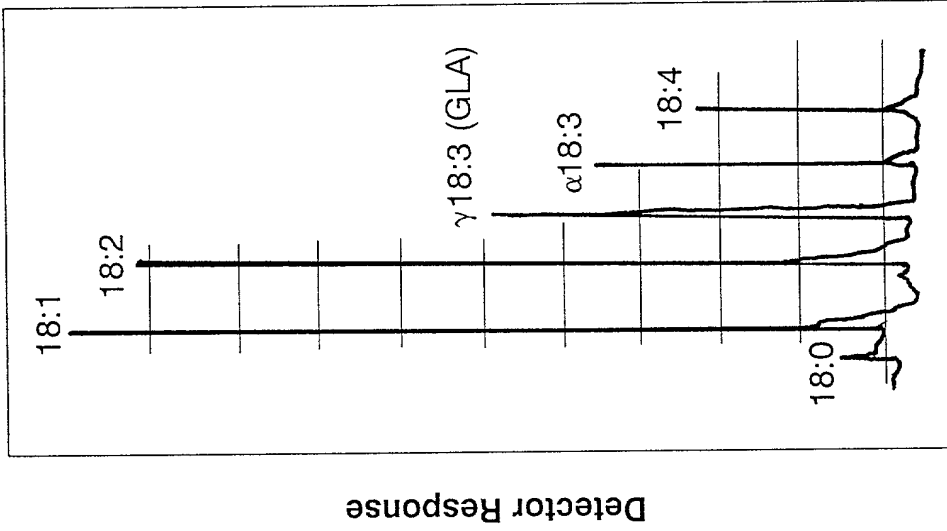


**FIGURE 1A**

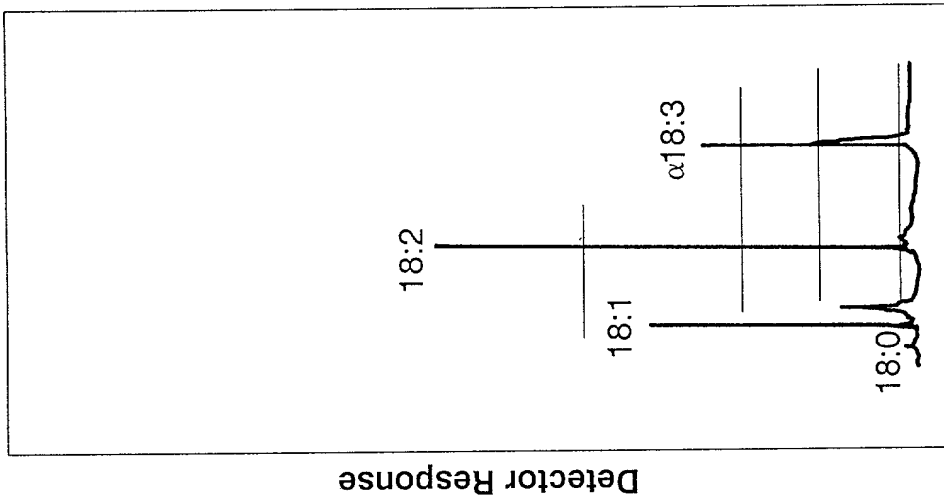


**FIGURE 1B**



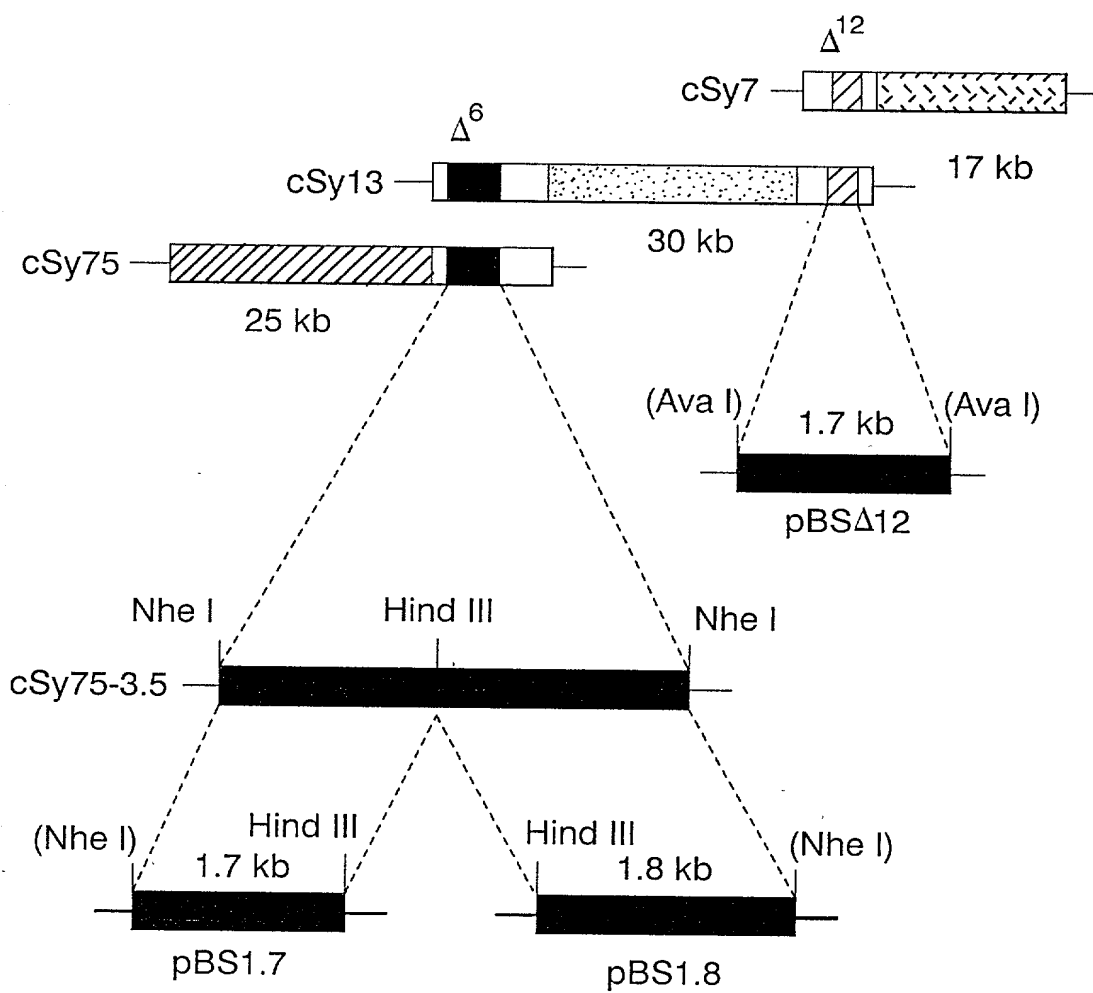
Retention Time

**FIGURE 2B**



Retention Time

**FIGURE 2A**

**FIGURE 3**

4/27

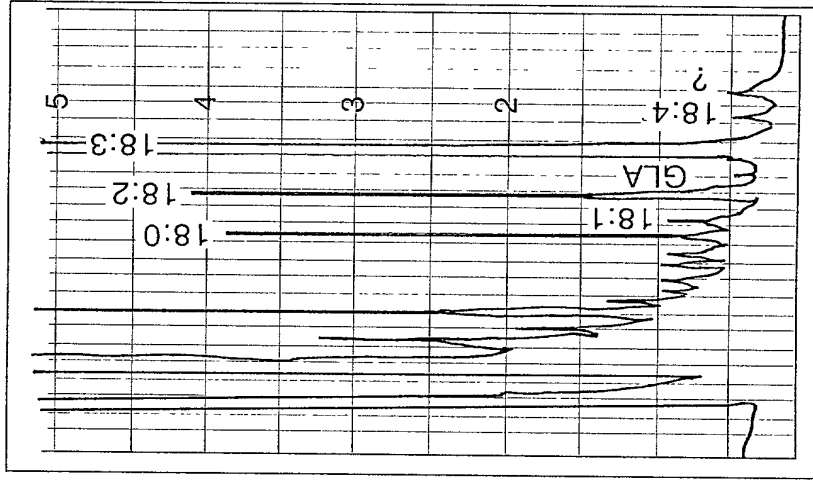


FIGURE 4B

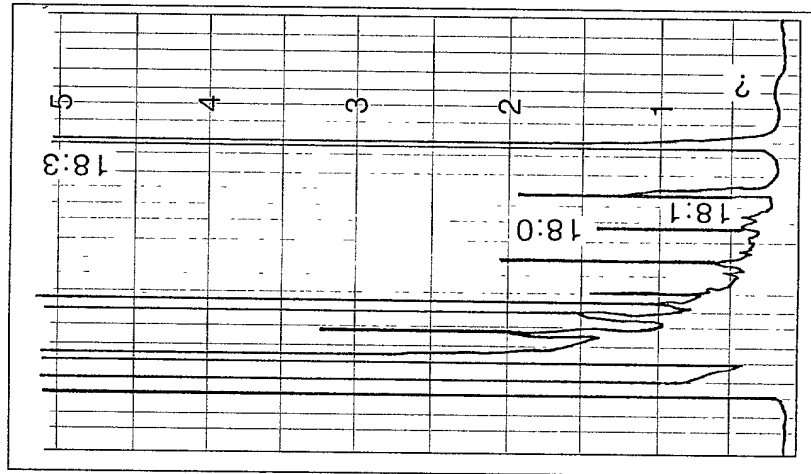


FIGURE 4A

total 95262001

CCAT' 332600T

1 aatatactgcc taccctccca aagagagtag tcatTTTTca tcaatggctg  
 81 aactcaagaa ccacgataaa cccggagatc tatggatctc gattcaaggg  
 161 gaccatccag gtggcagctt tcccttgaag agtcttgctg gtcaagaggt  
 241 cctacatgg aagaatcttg ataagtTTTT cactgggtat tatcttaag  
 321 ataggaagct tgtgtttgag ttttctaaaa tgggtttgta tgacaaaaa  
 401 atagcaatgc tgtttgctat gagtgtttat ggggttttgt ttgtgaggg  
 481 gatggggttt ctftggattc agagtgggtg gatggacat gatgctgggc  
 561 ataagtttat gggatatTTT gctgcaaatf gcttttcagg aataagtatt  
 641 cacattgcct gtaatagcct tgaatatgac cctgatttac aatatatacc  
 721 ttcactcacc tctcatttct atgagaaaaag gttgactttt gactctttat  
 801 cattttacc tattatgtgt gctgctaggc tcaatatgta tglacaaatct  
 881 tcctatcgag cttaggaact ctggggatgc ctagtgttct cgatttggtat  
 961 gggtgaaaga attatgtttg ttattgcaag tttatcagtg actggaatgc  
 1041 ctccaagtgt ttatgtttgga aagcctaaag ggaataaatg gttgagaaa  
 1121 cctccttgga tggattgggt tcatgggtgga ttgcaattcc aaattgagca  
 1201 ccttaggaaa atctcgccct acgtgatcga gttatgcaag aaacataaat  
 1281 ccaatgaaat gacactcaga acattgagga acacagcatt gcaggctagg  
 1361 gtatgggaag ctcttcacac tcatgggttaa aattaccctt agttcatgta  
 1441 gtgtcttgtc ttggttctac ttgttggagt cattgaaact tgtcttttat  
 1521 gaggttttgc ttccatctcc attattgatg aataaggagt tgcataattgt  
 1601 gaatgtactt tgtaccactg tgttttcagt tgaagctcat gtgtacttct  
 1681 tatTT

FIGURE 5A(1)



A - - - - - A

```

1  MAAQIKKYIT SDELKNHDKP GDLWISIQGK AYDVSDWVKD HPGGSFPLKS
81 LKDYSVSEVS KDYRKLVFEF SKMGLYDKKG HIMFATLCFI AMLFAMSVYG
161 AGHYMVVSDS RLNKFMGIFA ANCLSGISIG WWKWNHNAHH IACNSLEYDP
241 SLSRFFVSYQ HWTIFYPI MCA ARLNMYVQSL IMLLTKRNV YRAQELLGCL
321 GMQQVQFSLN HFSSSVYVGK PKGNNWFQKQ TDGTLDISCP PWMDWFHGG
401 HNL PYN YASF SKANEMTLRT LRNTALQARD ITKPLPKNLV WEALHTHG
    
```

FIGURE 5B(1)

A | | | | | | A

LAGQEVTD	DAF	VAFH	PASTWK	NLDKFF	TGY	80
VLFC	EGVL	VH	LFSG	CLMG	FL	160
DLQY	IPFL	VV	SSKF	FGSL	TS	240
VFSI	WYPL	LV	SCLP	NWGER	I	320
<u>QFQI</u>	<u>EH</u>	<u>HL</u>	<u>FP</u>	KMPRC	NLRKI	400
				SPYVI	ELCKK	448

FIGURE 5B(2)



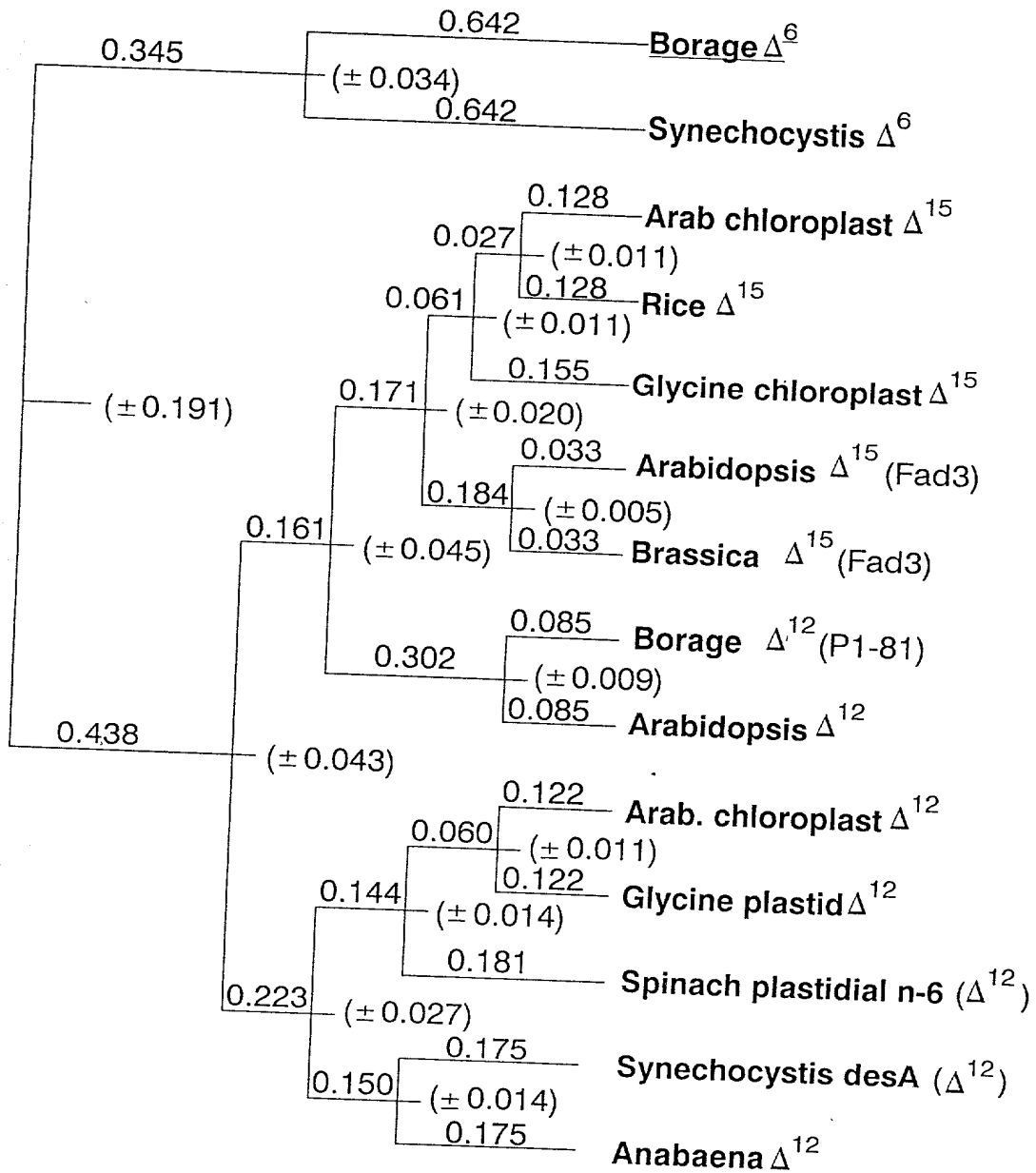


FIGURE 6

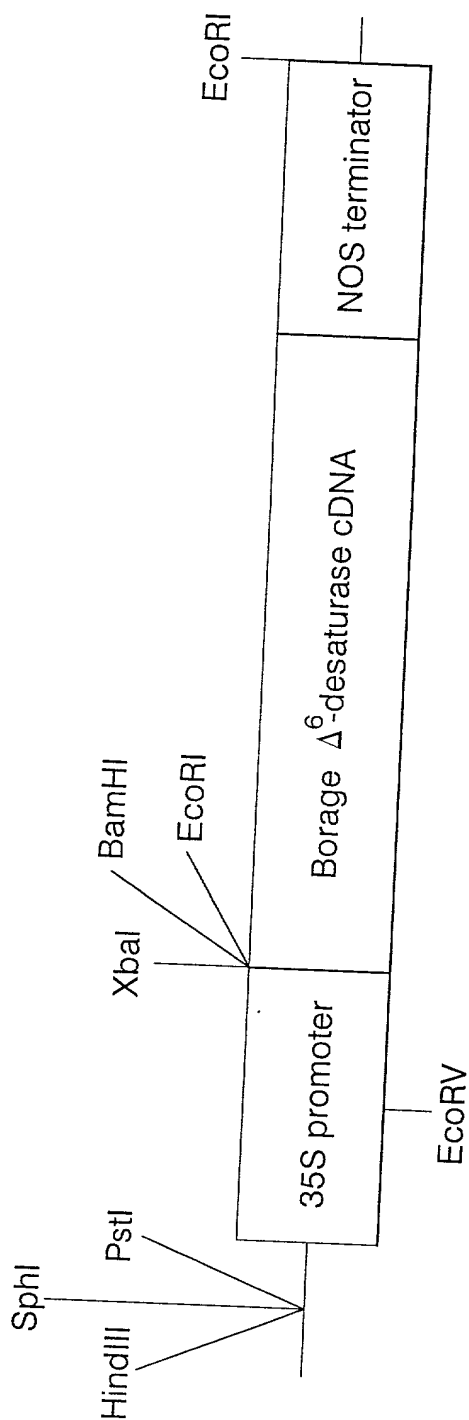


FIGURE 7

11/27

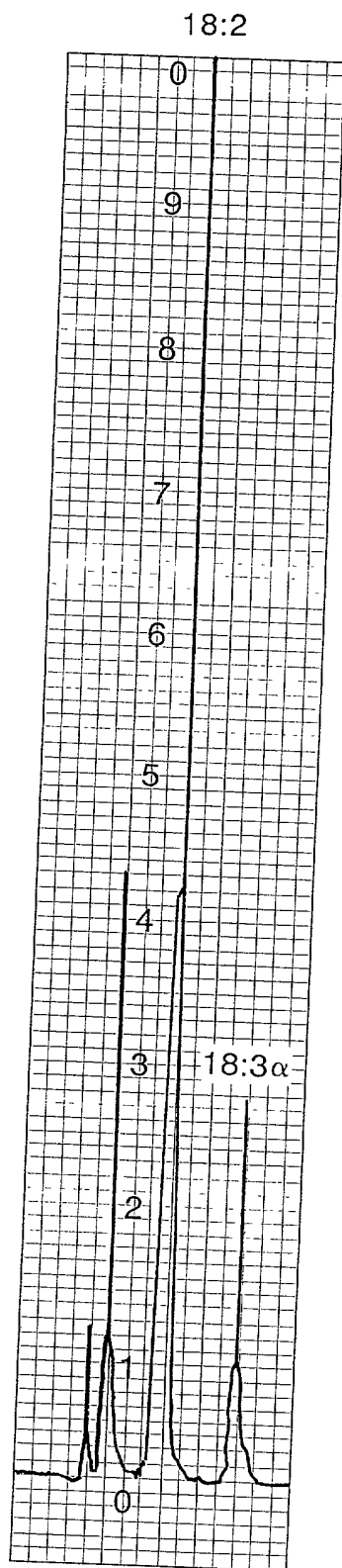


FIGURE 8A

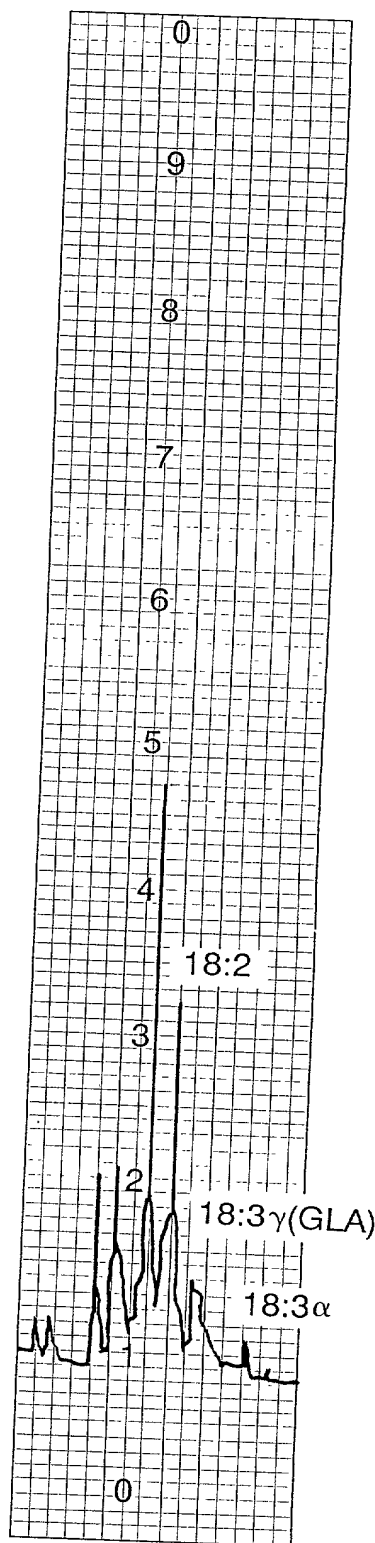
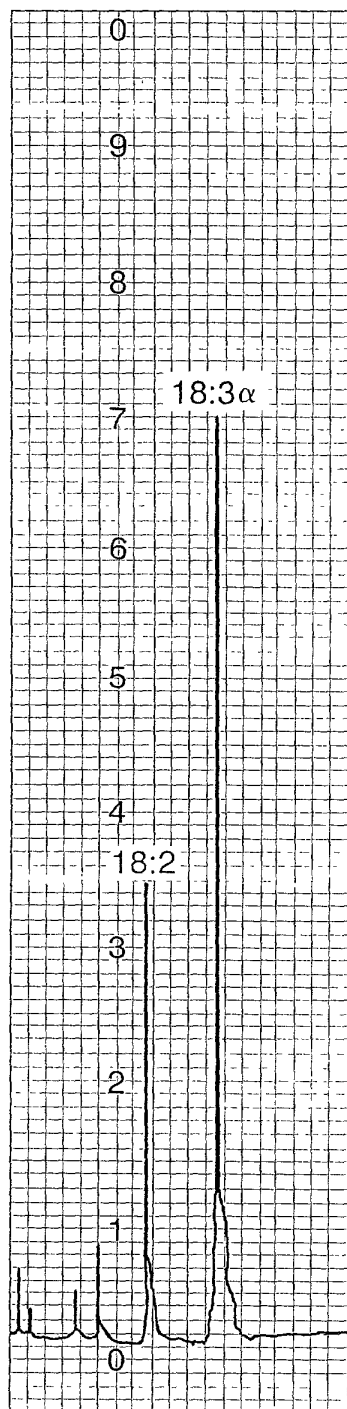
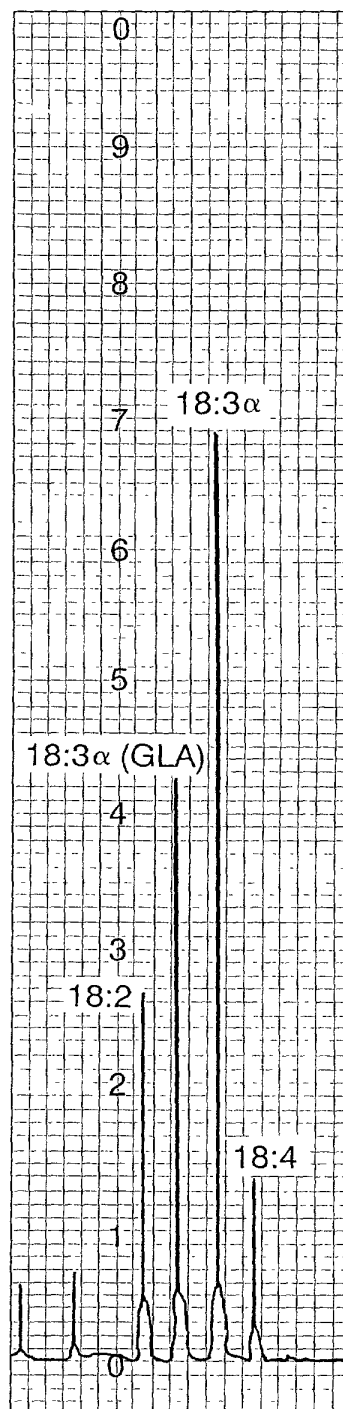


FIGURE 8B



**FIGURE 9A**



**FIGURE 9B**

Complete DNA sequence and deduced amino acid sequence of  
Evening Primrose Putative  $\Delta 6$ -desaturase

A - - - - - A

GCT	AAG	AAG	TAT	ATC	ACG	GCG	GAG	GAC	CTC	CGC	CGC	CAC	AAC
A	K	K	Y	I	T	A	E	D	L	R	R	H	N
ATC	TCC	ATC	CAG	GGC	AAG	GTC	TAC	GAC	GTC	TCT	CGG	TGG	GCG
I	S	I	Q	G	K	V	Y	D	V	S	R	W	A
GAG	GTC	CCG	CTC	CTC	ATG	CTG	GCC	GCG	CAG	GAC	GTC	ACC	GAC
E	V	P	L	L	M	L	A	G	Q	D	V	T	D
CCG	GGC	ACG	GCG	TGG	CGG	CAT	CTG	GAT	CCG	CTC	TTC	ACC	GGC
P	G	T	A	W	R	H	L	D	P	L	F	T	G
GAA	GTG	TCG	GAG	ATC	TCC	AAG	GAC	TAC	CGG	AGG	CTT	TTG	AAC
E	V	S	E	I	S	K	D	Y	R	R	L	L	N
ATC	TTC	GAG	AAG	AAG	GGC	CAC	CAC	ATC	ATG	TGG	ACG	TTC	GTC
I	F	E	K	K	G	H	I	M	W	T	F	V	
GCG	GCA	ATC	GTC	TAC	GGC	GTG	CTG	GCG	TCG	GAG	TCC	GTC	GGA
A	A	I	V	Y	G	V	L	A	S	E	S	V	G
GCA	CTG	CTG	GGC	TTG	CTG	TGG	ATC	CAA	GCC	GCG	TAT	GTG	GGC
A	L	L	G	L	L	W	I	Q	A	A	Y	V	G

B - - - - - B

FIGURE 10A

A	TCCACACAATG	GAG	GGC	GAA
	M	E	G	E
	AAG TCC	GGC	GAT	CTC TGG
	K S	G D	L W	
	GCG GAG	CAC	CCC	GGC GGC
	A E	H P	G G	
	GCC TTC	ATT	GCG	TAC CAC
	A F	I A	Y H	
	TAC TAC	CTC	AAG	GAC TTC
	Y Y	L K	D F	
	GAG ATG	TCG	CGG	TCC GGG
	E M	S R	S G	
	GGC GTT	GCG	GTC	ATG ATG
	G V	A V	M M	
	GTT CAC	ATG	CTC	TGC GGC
	V H	M L	C G	
	CAT GAC	TCC	GGC	CAT TAC
A	H D	S G	H Y	

C-----C

FIGURE 10B

## FIGURE 10C

total 34200

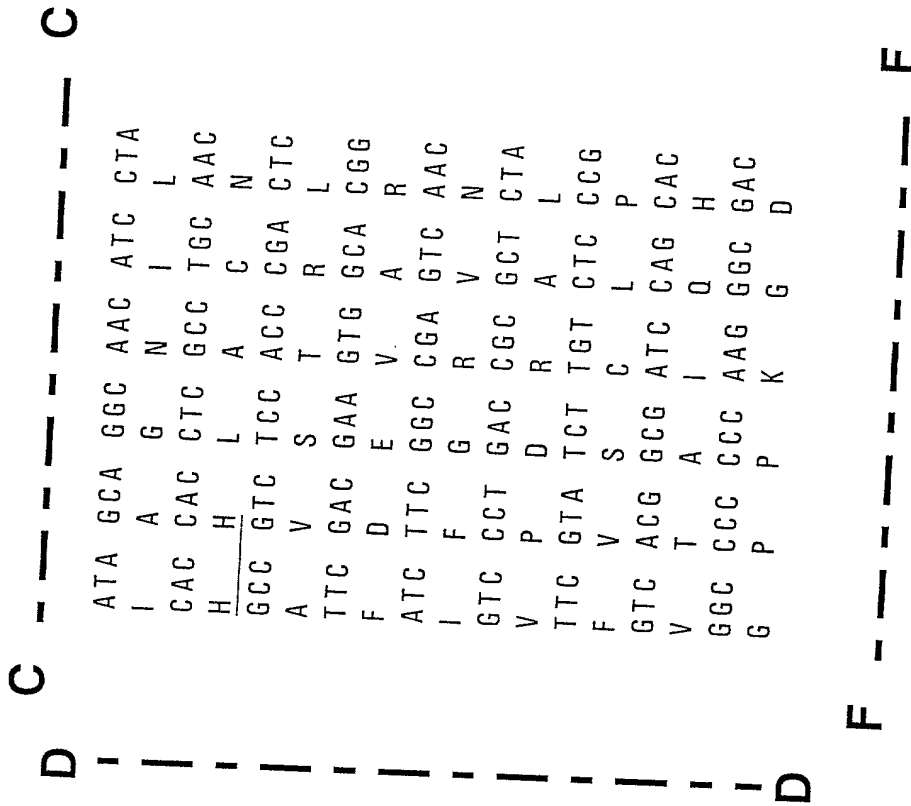


FIGURE 10D



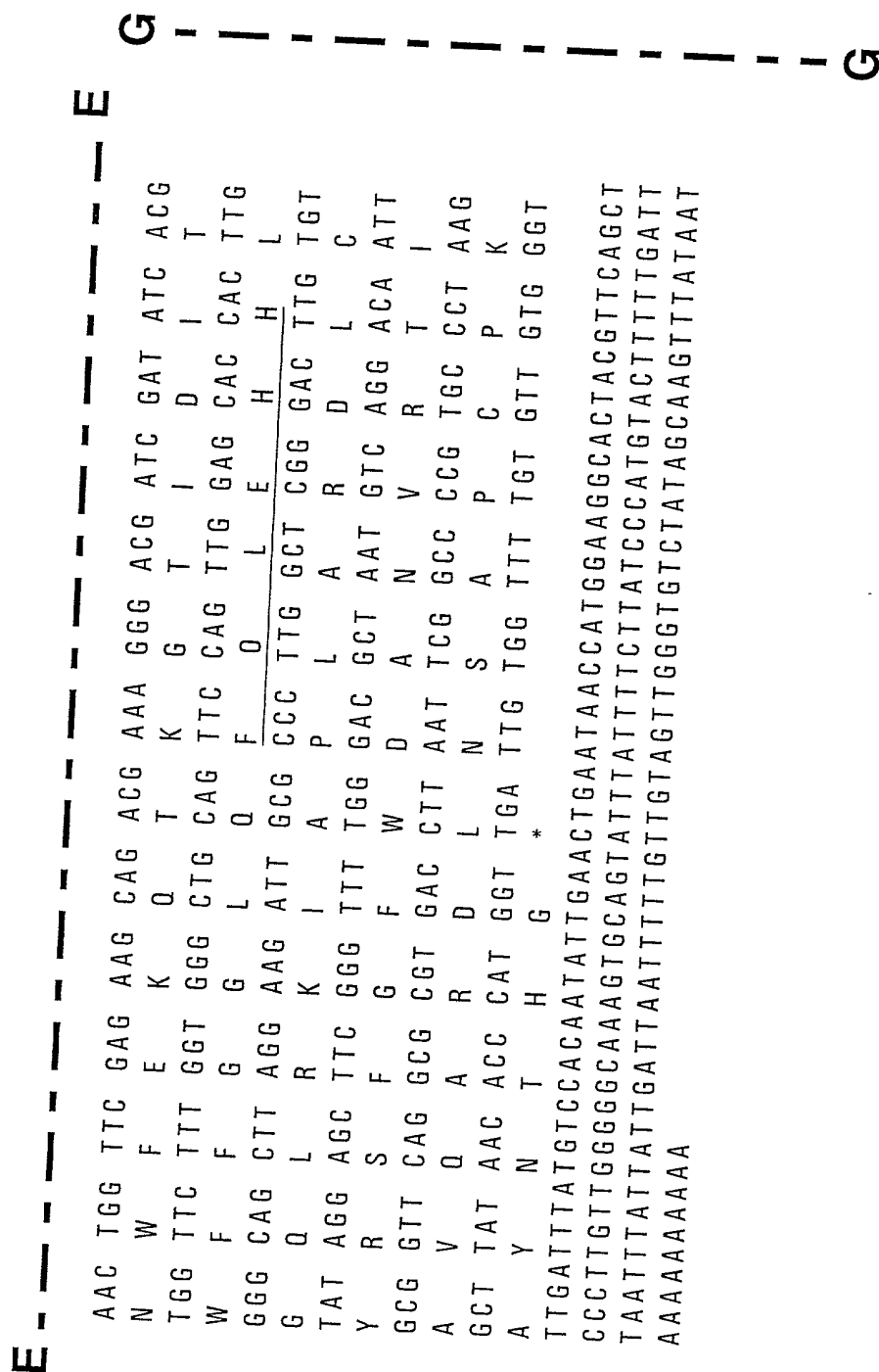


FIGURE 10E

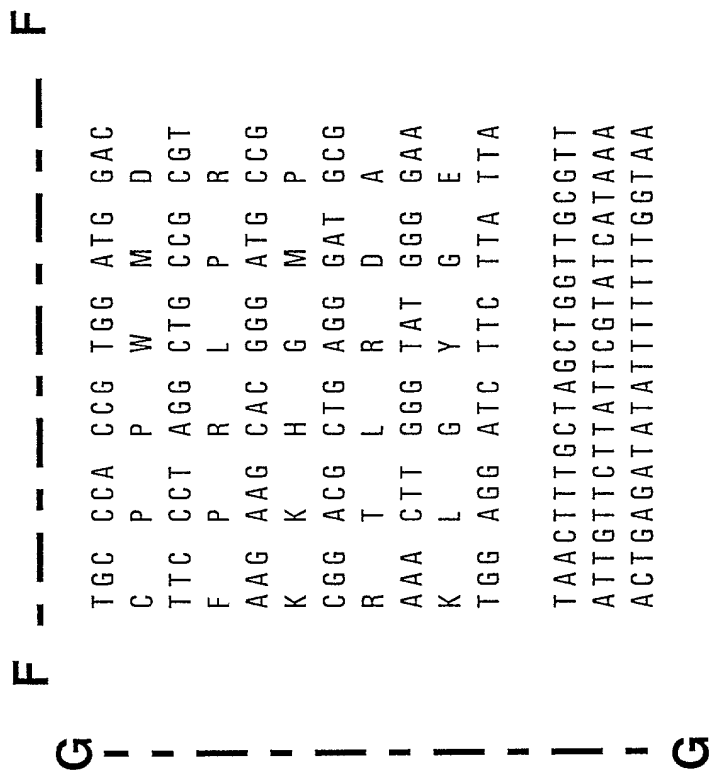


FIGURE 10F

EP vs Bo Delta 6-desaturase Formatted Alignment

EPD6prot	MEGEAKKYIT	AEDLRHKS	GBLWISIQGK	VYDVSRMAAE	HPGGGEVPLLM	50													
BoD6prot	MAAOKKYIT	SDELKNHDKP	GDLLWISIQGK	AYDVSDWVKD	HPGGGSFPLKS	50													
Consensus	M	KKYIT	EL	HK	YDVS	PL													
EPD6prot	LAGQDVTDAF	LAHYHPGTAWR	HLDP	FTGYL	KDFEVSSEIS	KDYRRLLNEIM	100												
BoD6prot	LAGQEVTDAF	VAFHPASTWK	NLDKFF	FTGYL	LKDYYSVSEVS	KDYRRLLVFEF	100												
Consensus	LAGQDVTDAF	AHP	W	LD	FTGYL	LKD	VSE	S	KDYR	L	E	100							
EPD6prot	SRSGI	FEKKG	HII	MWTIF	VGV	AVMMAAI	VYGV	VT	AS	ES	VG	VH	ML	OG	AL	GL	L	150	
BoD6prot	SKMGL	YDKKG	HII	MFATL	CFI	AML	FAM	MSV	YG	VLF	CEGV	L	VH	LF	SG	CL	MG	FL	150
Consensus	S	G	KKG	H	T	A	A	A	VYGV	VL	E	V	VH	G	L	G	L	L	150
EPD6prot	WIQAAAY	VGHQ	SGHYQ	VIMPT	R	GYNRI	TOLI	A	GNI	L	TIG	SI	A	WWK	W	HNA	H	H	200
BoD6prot	WIQSGWI	GHQ	AGHYM	VVS	DS	RINKF	MGI	FA	ANCL	SGI	SI	G	WWK	W	HNA	H	H	200	
Consensus	WIQ	G	GHQ	V	N	N	A	A	N	L	G	SI	WWK	W	HNA	H	H	200	

A-----A

FIGURE 11A

A - - - - - A

EPD6prot	LACNSL	CYDP	DLQH	PVFA	STR	ENSI	TS	VFYGRV	LRFD	EVARE	ISYQ	250
BoD6prot	IACNSL	EYDP	DLQY	PFLV	SSKFFG	SLTS	HEVEKR	IRLI	FD	SLSRFF	ISYQ	250
Consensus	ACNSL	YDP	DLQ	LP	V	S	TS	FY	LD	RF	ISYQ	250

EPD6prot	HWT	MYPV	MIF	GRVN	LEDTF	LLLT	TRRG	MP	DRAI	NLMGI	AV	300
BoD6prot	HWT	RYPI	MCA	ARLN	MYVDSL	IMLL	TRNV	YS	YRAQEL	IGCL	IV	300
Consensus	HWT	YP	M	R	N	Q	LT	R	V	RA	PL	300

EPD6prot	SCLP	NWP	ERF	GFVL	ISF	AVT	AI	QRVQ	FLN	HFS	GDTY	VGP	350
BoD6prot	SCLP	NWGE	RI	MFVI	ASL	SVT	GMDQ	VQF	ESLN	HFS	SSVY	VGK	350
Consensus	SCLP	NW	ER	EV	S	VT	Q	VQF	LN	HFS	YVG	350	

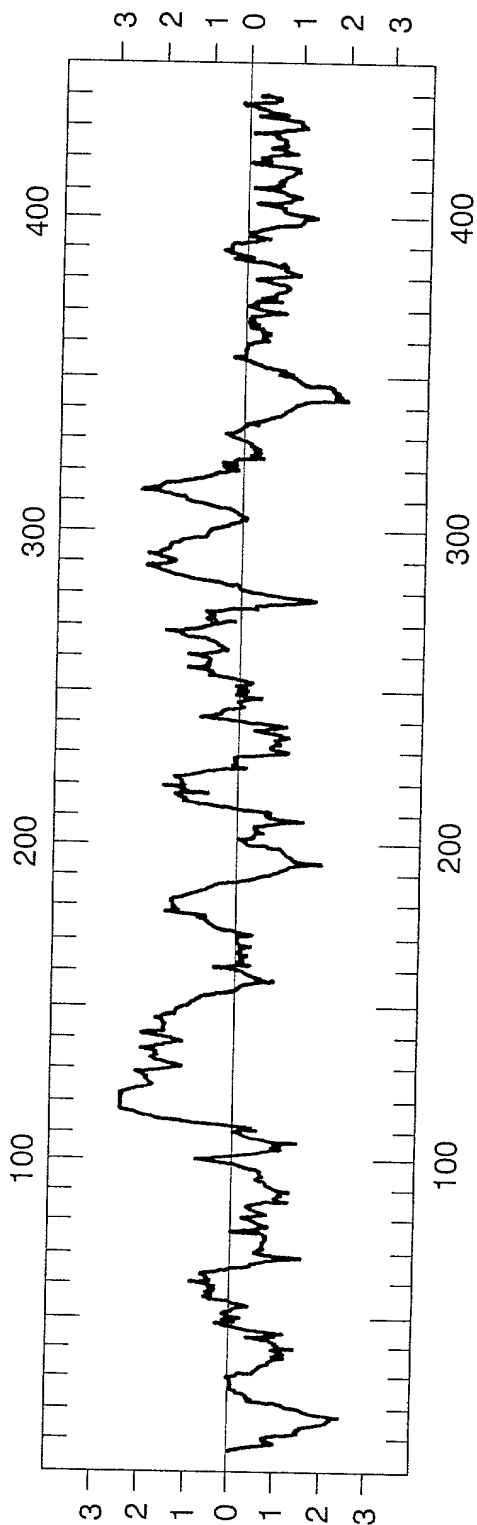
EPD6prot	TKGT	DI	CP	PWMD	WFF	GG	QFQ	EHHL	FP	RI	PRG	QLRK	400
BoD6prot	TDGT	DI	SCP	PWMD	WFH	GG	QFQ	KHHL	FP	KMPRC	NLRK	400	
Consensus	T	GT	DI	CP	PWMD	WF	GG	QFQ	KHHL	PR	LRK	400	

B - - - - - B

FIGURE 11B

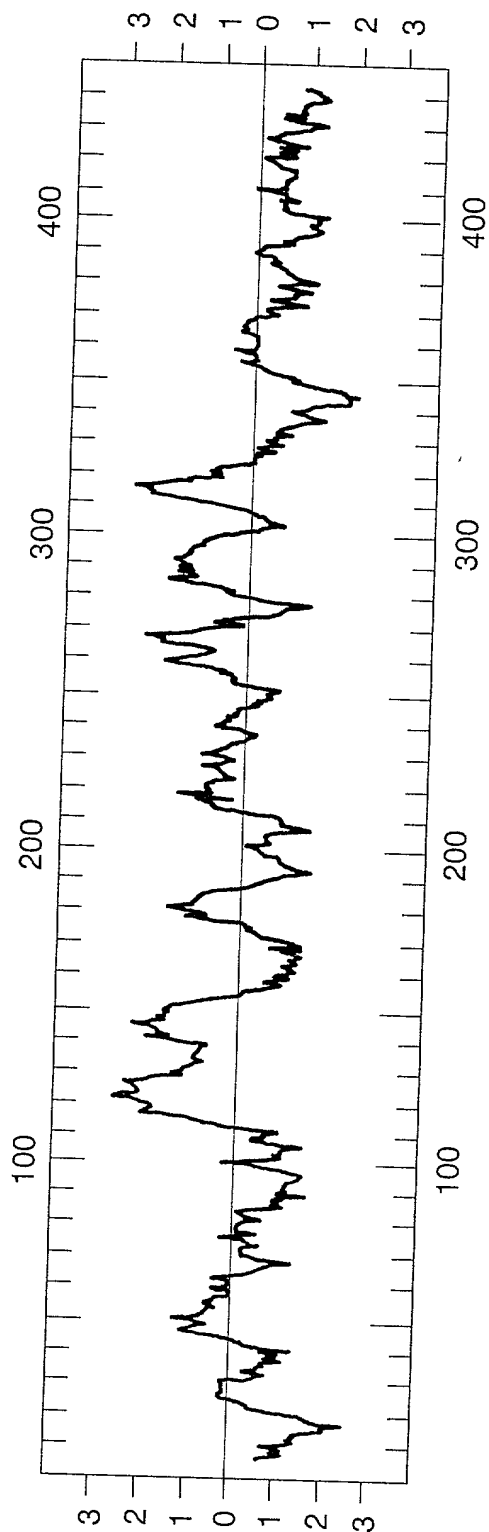
B		-----B																																					
EPD6prot	HGMPY	RSF	GF	WD	AN	VRT	RT	LR	DA	AV	Q	ARD	LN	S	AP	Q	P	K	K	L	GY	GE	AY	N	T	H	G	450											
BoD6prot	HNL	P	Y	N	Y	A	S	F	S	K	A	N	E	M	T	L	RT	LR	N	I	AL	Q	ARD	I	TK	PL	P	K	N	L	V	W	E	AL	H	T	H	G	448
Consensus	H	P	Y	.	.	.	E	.	.	A	N	.	.	T	.	RT	LR	A	Q	ARD	.	.	.	P	P	K	L	.	.	.	E	A	.	T	H	G	450		

FIGURE 11C



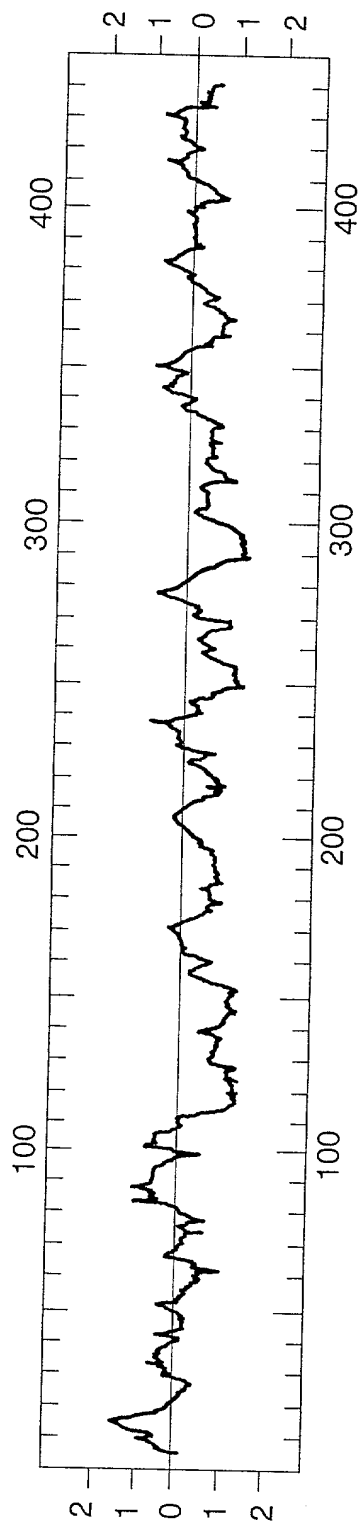
Borage  $\Delta^6$ -Desaturase Kyte-Doolittle Hydrophobicity Plot

**FIGURE 12A**



Evening Primrose Putative  $\Delta^6$ -Desaturase Kyte-Doolittle Hydrophobicity Plot

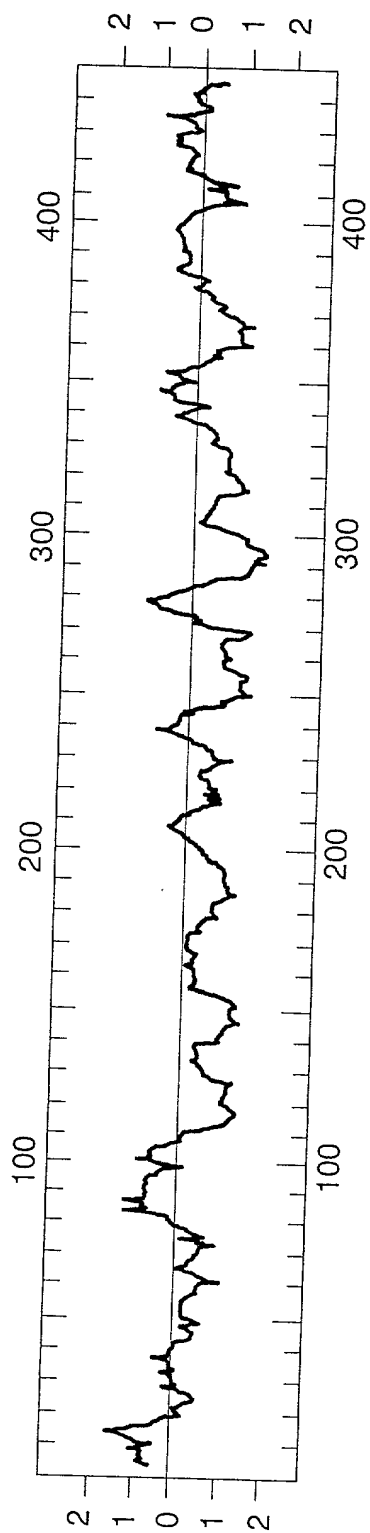
**FIGURE 12B**



Borage  $\Delta^6$ -Desaturase Hopwood Hydrophilicity Plot

**FIGURE 13A**





Evening Primrose Putative  $\Delta^6$ -Desaturase Hopwood Hydrophobicity Plot

FIGURE 13B

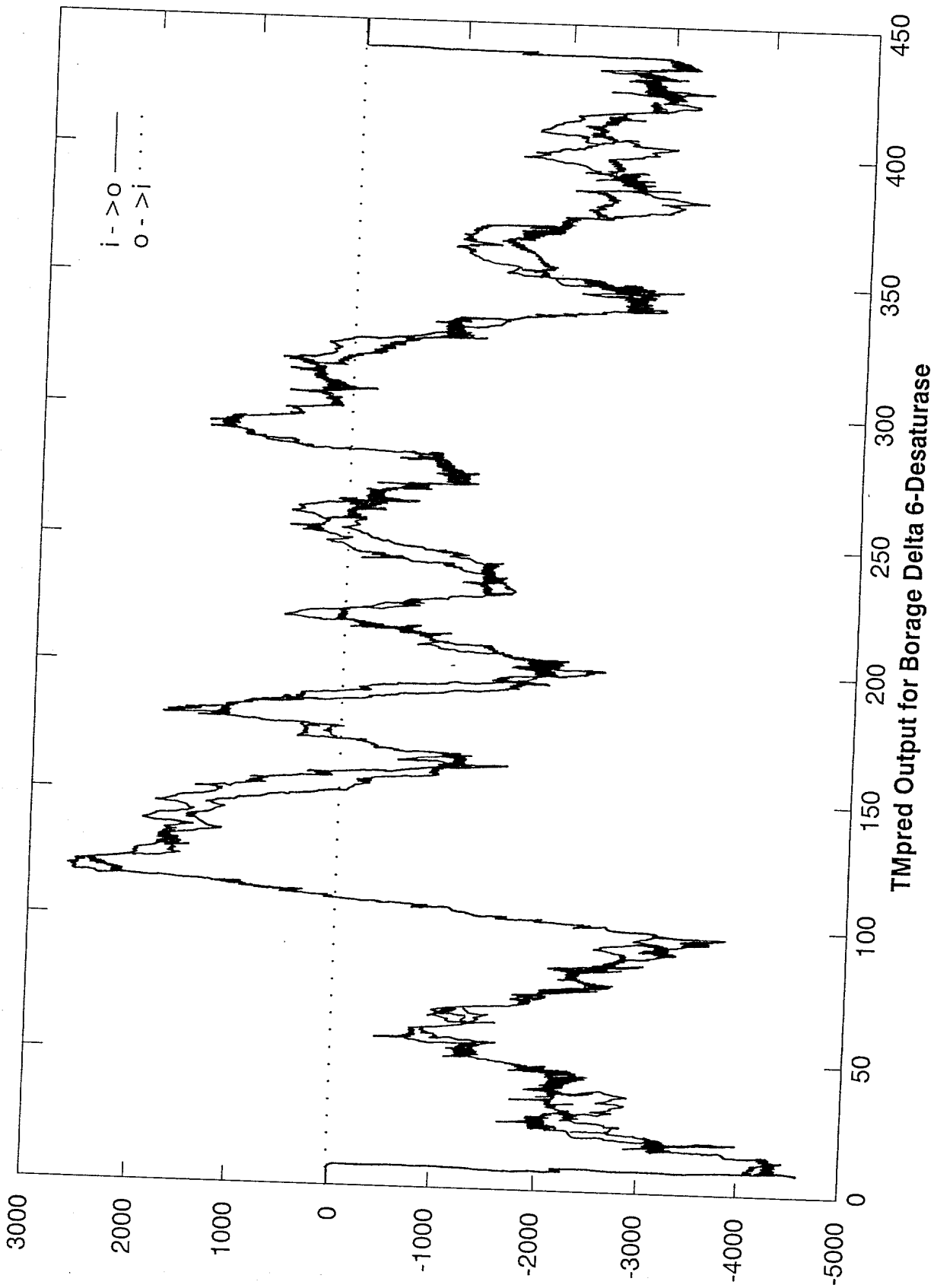


FIGURE 14A

FIGURE 14B

